DOCUMENT RESUME

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ABSTRACT

In 1965 the International Association for the Evaluation of Educational Achievement (IEA) inaugurated a cross-national survey of achievement in six subjects: Science, Reading Comprehension, Literature, English as a Foreign Language, French as a Foreign Language, and Civic Education. The overall aim of the project was to use international tests in order to relate student achievement and attitudes to instructional, social, and economic factors, and from the results to establish generalizations of value to policy makers worldwide. Contained here are three manuals setting out the basic procedures to be followed by national centers, school coordinators, and test administrators in administering all phases of the Science, Reading Comprehension, and Literature testing. Information concerning these tests can be found in ED 081 639 (Science), ED 084 503 (Reading Comprehension), and ED 085 709 (Literature). (RC)

ED102193

STAGE 2

IEA/M1

1

IEA SIX-SUBJECT SURVEY MANUALS

The basic procedures to be followed in the main testing of the IEA Six-Subject Survey were set out in a series of manuals:

Stage 2 IEA/M1 Manual for National Centers
IEA/M2 Manual for School Coordinators
IEA/M3 Manual for Test Administrators

Stage 3 IEA/M1/Stage 3 Manual for National Centers
IEA/M2/Stage 3 Manual for School Coordinators
IEA/M3/Stage 3 Manual for Test Administrators

The Six-Subject Survey Instruments are available from ERIC Clearinghouse.

In the Six-Subject Survey Data Bank, every questionnaire and test item used is identified by a unique short variable name, the majority of these formed from the new instrument number (which identifies the [illegible] instrument by type, population in which used, and subject) and the respective item number within the instrument. However, the instrument number used in the IEA manuals is the number which was in use at the time of testing. Here follows the key to the new instrument numbers, then a listing of the old numbers used in the manuals with the new ones used in the Data Bank.

1: Type of Instrument

E = Examination (student)
Q = Questionnaire (student)
T = Teacher questionnaire
S = School questionnaire

2: Student Population

1 = I	6 = II and IV
2 = II	7 = I, II and IV
3 = III	8 = I and IV
4 = IV	9 = IV Specialist
5 = I and II	X = XX: Teacher or School questionnaire

3: Subject

S = Science
R = Reading Comprehension
L = Literature
M = Mother Tongue (Reading Comprehension and Literature)
E = English as a Foreign Language
F = French as a Foreign Language
C = Civic Education
2 = All Stage 2 Subjects
3 = All Stage 3 Subjects
5 = All Stage 2 and Stage 3 Subjects

4-5: Instrument Within Type

One or two characters used when necessary to uniquely identify each instrument when there is more than one instrument of the same type.

FL 004 162

Science Tests

New ID No.	Old No.(s)	Population	Title
ESSA	IEA/1 A	I	Science Test Section A
ESSB	IEA/1 B	I	Science Test Section B
S2SA	IEA/4 A	II	Science Test Section A
S2SB	IEA/4 B	II	Science Test Section B
S4SA	IEA/10 A	IV	Science Test Section A
S4SB	IEA/11 B	IV	Science Test Section B, Nonrotating Items
S4SP	IEA/11 B (P)	IV	Advanced Science Rotating Items, Set P
S4SQ	IEA/11 B (Q)	IV	Advanced Science Rotating Items, Set Q
S4SR	IEA/11 B (R)	IV	Advanced Science Rotating Items, Set R
S4SS	IEA/11 B (S)	IV	Advanced Science Rotating Items, Set S
S4ST	IEA/11 B (T)	IV	Advanced Science Rotating Items, Set T
S4SU	IEA/11 B (U)	IV	Advanced Science Rotating Items, Set U
BSSB	IEA/15	IVS	Specialist Biology
S2SC	IEA/16	IVS	Specialist Chemistry
S4SP	IEA/17	IVS	Specialist Physics
S2SX[A]	IEA/19	II	Science Practical II
S4SX[A]	IEA/20	IV	Science Practical IV
S4SXB[A]	IEA/21	IV	Biology Practical IV
S4SXC[A]	IEA/22	IV	Chemistry Practical IV
S4SXP[A]	IEA/23	IV	Physics Practical IV
S2SK	IEA/5C	II	TOSC-Understanding the Nature of Science
S4SK	IEA/12T	IV	TOSC-Understanding the Nature of Science

Science Student Questionnaires

QSSS	IEA/5 S IEA/12 S	II, IV	Science Questionnaire
QSSK	IEA/5 K IEA/12 K	II, IV	Science Attitude and Descriptive Scales (also the Place of Science in the School and in the World Outside)
QISK	IEA/1K	I	Science Attitude and Description Scales (also the Place of Science in the School and in the World Outside)

[A]Practical tests were used only in Japan Population II and England Populations II and IV. These data will not be documented within this Six-Subject Data Book.

Science Student Questionnaire

Doc ID No.	Old Model	Population	Title
S000	IEA/SQ1	Not Applicable	Student Questionnaire: Science Section
S309	IEA/ST1/S9	Not Applicable	Views on the Teaching of Science/Views on Practical Work

SUBJECT-FREE INSTRUMENTS FOR READING COMPREHENSION AND LITERATURE

Reading Comprehension Tests

R24C	IEA/1C	I	Reading Comprehension Test, Section C
R24D	IEA/1D	I	Reading Comprehension Test, Section D
R30F[b]	IEA/2F	I, II	Reading Speed Practice Test, Section F
R30S	IEA/1F	I, II	Reading Speed Test
R28C	IEA/2C	II	Reading Comprehension Test, Section C
R28D	IEA/2D	II	Reading Comprehension Test, Section D
R44C	IEA/3AC	IV	Reading Comprehension Test, Section C
R44D	IEA/3AD	IV	Reading Comprehension Test, Section D

Reading Comprehension Student Questionnaire

Q24	IEA/1Q IEA/1AQ	II, IV	Student Reading Comprehension Questionnaire

Reading Comprehension and Literature Teacher Questionnaire

T09	IEA/TQ1	Not Applicable	Teacher Questionnaire: Mother Tongue (Reading Comprehension and Literature) Section

Literature Tests

R31A	IEA/1A	II, IV	"The Use of Force", Notated Literature Test
R31F	IEA/1G	II, IV	"I Am the Song", Notated Literature Test
R31E	IEA/1E	II, IV	"The Sun by the Fountain", Notated Literature Test
R31D	IEA/1H	II, IV	"The Ant", Literature Test
R31B[b]	IEA/1B	II, IV	Multiple-Choice Literature Test ("The Use of Language")

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[b]Not used for data collection.

[c]Data not available within the Subject Data Bank.

[illegible]

[illegible]	[illegible]	[illegible]	[illegible]
W1A4	IB4/1A	IA, 2A	[illegible]
W1A7	IB4/1A	IA, 2A	[illegible]

[illegible]

[illegible]

E13A	IB4/1A	1	[illegible]
W2A4	IB4/2A	2A	[illegible]
W4A4	IB4/2A	2A	[illegible]

[illegible]

W1A5	IB4/1A	1	[illegible]
W1A5	IB4/1A IB4/1.5A	1A, 2A	[illegible]
W1A9	IB4/2A	2	[illegible]
W1A9	IB4/2A IB4/3.5A	1A, 3A	[illegible]

[illegible]

W1A	IB4/1A	Not Applicable	[illegible]

[illegible]

E4A	IB4/1A	Not Applicable	[illegible]

[illegible]

[illegible]

SECTION 2 12

ADMINISTRATIVE ARRANGEMENTS

It is assumed that (a) an appropriate number of schools have been drawn.

(b) agreement has been obtained, where necessary, to approach the schools drawn in the sample.

A. Initial Contact with Schools

A1. A letter signed by the Head of the National Center or some other appropriate high official, including the following points is to be sent to the head teachers of those schools:

a. Giving the purpose of the project.
b. Asking the co-operation of school.
c. Indicating the approximate number of students from various grades (forms) to be tested in that school.
d. Giving the proposed dates of testing in that school.
e. Indicating the amount of time involved in testing.
f. Detailing the other demands to be made on the school (e.g. students to fill in questionnaires and attitude and descriptive scales, and for Teacher and School Questionnaires to be completed.)
g. Asking for the name of the person to be responsible for testing in that school (School Co-ordinator) or informing the Head Teacher of the arrangements you will be making from your National Center.
h. Requesting name of person to whom all future correspondence should be addressed.

B. Follow-up Contact with Schools

B1. As soon as co-operation has been obtained, a further letter covering the following points should then be sent to each school:

a. Thanking school for co-operation.
b. Enclosing copies of Manual 2.
c. Giving an explanation of how to complete Student Name Forms (see Dry Run Manual). This may be an onerous task for large schools. National Centers must find the most appropriate way to induce the schools to co-operate. One such procedure is to have the schools do the sub-sampling by using date of birth (see Dry Run Manual). If, on the other hand, sub-sampling is carried out at the National Center, then the N.T.C. should ensure that this is done accurately for each school according to the sampling fraction for the school.

d. Giving an explanation of how to complete Teacher Name Forms (see Dry Run Manual). The National Center will need to know which teachers are Science teachers and which are Mother Tongue teachers. Please note the distinction between the definition of the target population of teachers for Population I and Populations II and IV (see Accompanying Notes to Teacher Questionnaires). Furthermore, in the main run there is only one questionnaire for all Mother Tongue teachers. Questions 1-27 are completed by all Mother Tongue teachers and Questions 28-59 by Literature teachers only.
e. Pointing out the necessity for keeping to the arrangements in Manuals 2 and 3.

C. Action on Completed Student Name Forms

C1. When the Student Name Forms have been returned, the following (or some agreed alternative) action will have to be taken on each:

a. Check the date of birth and eliminate all students who fall outside the determined target population.
b. Carry out appropriate sub-sampling, where necessary (see pages 7-8 in Dry Run Manual).
c. Enter consecutive numbers in Column 3 against the names of the students to be tested. Start with 001, 002, etc.

S E C T I O N 3

Introduction

This section is compulsory reading for all NTOs who are planning to use MRC answer cards. It should be read once as soon as possible and if there are any matters in it which are unclear (not dealt with in sufficient detail or not dealt with at all) a query should be addressed to Dr. Postlethwaite immediately.

NTOs will need to make constant reference to this section when they are completing their orders for answer cards and when the shipments of answer cards arrive at their National Centers.

The contents list on the next page contains a brief summary of the points dealt with in this section and on the following page there is a checklist of activities arranged in the sequence in which they will occur.

CONTENTS

A. Checklist of Activities 12
B. The 11 MSC Answer Card Types 13
C. Card 10 and Other National Option Spaces 13
D. Agreed Reception Date and Agreed Order Date 15
E. Where to Send Order for Answer Cards 16
F. Description of Form IEA/A/32 (Main) 16
G. Further Notes About Completing Form IEA/A/32(Main) 19
H. Structure of the Punched Identification Number 20
I. The Card Code/Test Version Identification Digit 20
J. School Opportunity to Learn Cards 21
K. Teacher Identification Numbers 22
L. How Program Which Punches Identification Numbers Operates 22
M. Extra 10% of Answer Cards 24
N. Sequence in Which Answer Cards Will Be Sent to National Centers 24
O. Packaging of Answer Cards 26
P. Conveyance of Answer Cards to National Centers 26
Q. Superfluous Answer Cards 27
R. Missing Answer Cards 27

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STAGE 2

Manual I
Section 3

A. Checklist of activities

A1. Complete order for answer cards and send 2 copies to centre by [answer order date] (sub-sections B, E, F and G).

A2. Await acceptance of letter from ILEA Central telling that shipment of answer cards is on the way - letter may almost not reach [your answer reception date] (F and F).

A3. On receipt of answer cards at National Centre, examine and open packages, check that whole shipment is present (C, I, J, K, L, M, N, and O).

A4. When satisfied shipment is complete, send letter to Mr. Turtle-Townsite telling him so (F).

A5. In due course (probably as Student and Teacher Questionnaires are being assembled), discard superfluous answer cards and create sets for eg students and teachers for whom cards were not ordered (F, L, M, O and R).

A6. Where appropriate, supply exact numbers of students and teachers in schools where this information was not available when order for answer cards was sent (F).

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STAGE 2

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[illegible]

[illegible]

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c. The ten digits of identification will therefore have the following structure for school cards:

aabbb1000D	school card 1 for Population I
aabbb2000D	school card 3 for Population II
aabbb3000D	school card 3 for Population III
aabbb4000D	school card 3 for Population IV
aabbb4000E	school card 9 for Population IV

where aa is the country number and bbb is the school number.

J3. Note that even where a country is not administering the IVS Science tests (the tests which are marked up on Card 9), a school card 9 is nevertheless still produced for each school in which Population IV students are being tested. It should be remembered that National Centers have a choice of three alternatives (see page 7 of Manual II) as to which items will be rated for Population IV. When cards are returned, NPOs should at the same time inform Dr. Postlethwaite by separate letter as to which items have been rated for Population IV.

K. Teacher Identification Numbers

K1. Population I teachers are numbered from 101 to 199 within schools. Teachers of other populations are numbered from 201 onwards within each school. The general structure of the ten digits of identification for teachers can be seen from the following:

aabbb-1ccW	Card 11 for a Population I teacher
aabbb-2ccW	Card 11 for a teacher of populations other than Population I

where 1cc and 2cc are the teacher numbers within schools. No population code is punched into column 8 in the case of teachers; instead, a hyphen ("-") is punched into this column.

L. How Program Which Punches Identification Numbers Operates

L1. The basic method of operation of the program is straightforward. If Form IEA/A/32 (Main) indicates that cards are required for a school which has 25 Population II students each of whom requires Answer Cards Numbers 3 through 8, 25 sets of answer cards will be produced with the first set being assigned student number 001, the second set being assigned student number 002, ..., and the twenty-fifth set being assigned student number 025.

The actual sequence which the program follows is to punch all Card 1s for all schools, followed by all card 2s for all schools and so on. After the punching is complete, the cards are arranged into student sets using a card sorter.

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L2. The above are details of the identification punching operation which are not essential for NTOs to remember. All that is important to NTOs is the sequence in which answer cards are arranged when they arrive at National Centers. This sequence is described later in sub-section M.

L3. However, it will be of some interest to NTOs to know how the punching program handles the 3 versions of Card 8 (X, Y and Z) and the 6 versions of Card 3 when used with Population IV students (P, Q, R, S, T and U). The Card 8 rotation of versions is described in detail in the following:

Firstly, the rotation sequence is initialized at the beginning of a country (so that the very first Card 8 produced for a country has an X in column 12) and nowhere else. The sequence for any given school, therefore, may start either at X or at Y or at Z and will follow one of the patterns below (which show only the last 4 digits of identification numbers):

.....001X	.....001Y	.....001Z
.....002Y	.....002Z	.....002X
.....003Z	.....003X	.....003Y
.....004X	.....004Y	.....004Z
.....005Y	.....005Z	.....005X
.....006Z	.....006X	.....006Y
.....007X	.....007Y	.....007Z
.	.	.
.	.	.
.	.	.

L4. Card 3s for Population IV students are punched in a similar manner with the initialization made at the beginning of the country, and so the first student in a school may have a card 3P, or a 3Q, 3R, 3S, 3T, or 3U depending upon what point the school occupies in the overall sequence.

L5. The important implication of this punching method for NTOs is that if they have estimated (and necessarily overestimated) the number of students in some schools (for those schools not having returned SNFs), then because more cards will be produced than students tested, there may ultimately be some inequalities in the number taking each rotated version. (See also sub-section F3 of section 3)

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L6. WARNING: Because of the way in which the punching method works, when there are too many cards to be run on one job on the Slough computer, between jobs there is sometimes a break in the sequence of rotated tests for Literature. This means that National Centers testing in Literature should await the MRC cards before packing the student envelopes in order to ensure that the rotated version of the Literature test given to any one student agrees with the rotated version given to him on the answer card.

M. Extra 10% of Answer Cards

M1. In addition to the answer cards ordered on Form IEA/A/32 (Main) all of which will have 10 digits of identification punched in columns 3-12, 10 per cent extra answer cards will be sent to countries. These extra cards will have no identification holes punched in them and therefore will be of quite general use in National Centers, as follows:

a. in replacing damaged answer cards
b. in supplying full sets of answer cards in cases where the NPO underestimated the numbers of students who would require materials.

These uses will be mentioned again in Section 5, sub-section R, and Section 6, sub-sections J and K, and will be described there in greater detail.

N. Sequence in Which Answer Cards Will Be Sent to National Centers

N1. After punching, cards will be packed in boxes and the boxes in cartons.

a. A box holds 2000 cards
b. A carton holds 5 boxes of 2000 cards each, a total of 10,000 cards.

It will be normal for a country to require several cartons. The country with the largest demand will require 24 cartons.

N2. The cartons and boxes will be numbered clearly. For example, if there are four cartons, the outside of the cartons will be marked as follows:

Carton 1 of 4, Boxes 1-5, Schools 001-123

Carton 2 of 4, Boxes 6-10, Schools 124-193

..... and so on.

STAGE 2

Manual I
Section 5

N3. Starting at the beginning of Box 1, the sequence of answer cards as they will arrive at the National Center will be as follows:

Cards for School 001

Cards for School 002

.
.
.

Cards for school with largest school number

10- blank Card 1s

10- blank Card 2s

.
.
.

appropriate to Card types enclosed

10- blank Card 11s

N4. Within a school which is testing at only one population level, the sequence of cards will be:

Teacher cards (Card 11s)

Opportunity to Learn cards

Cardsfor Student 001

Cards for Student 002

.
.
.

Cards for student with largest number

N5. For a school testing students at both Population II and Population IV, the sequence will be:

Teacher cards (Card 11s)

Opportunity to Learn Cards for Population II

Student cards for Population II

Opportunity to Learn cards for Population IV

Student cards for Population IV

If a school is testing at two populations one of which is Population I (say Population I and Population II), the sequence will be a little odd inasmuch as all the teacher cards will come at the beginning of the sequence, as follows:

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Teacher cards for Population I (Teacher Numbers 001-199)

Teacher cards for other Populations (Teacher Numbers 201, 202, ...)

Opportunity to Learn cards for Population I

Student cards for Population I

Opportunity to Learn cards for Population II

Student cards for Population II

O. Packaging for Answer Cards

O1. To give further protection to the answer cards during their journey to National Centers, sheet pieces of card will be inserted at intervals within boxes. PCOs should note the method of packaging on their arrival, save all packaging materials (cartons, boxes, pieces of sheet card, etc.) and ensure that the same standard of packaging is employed when the cards are returned to Stockholm for processing.

P. Conveyance of Answer Cards to National Centers

P1. Except for England and Scotland, answer cards will be air-freighted to National Centers. As soon as cards are dispatched from Slough, a form giving details of what has been packed (see also P3) will be sent to you by Miss Doreen Grisaler who is responsible for the identification packing of the cards at Slough. In the meantime, Dr. Postlethwaite will inform you of the name of the freighting agent in your country who will be responsible for contacting you and delivering the cards to you.

P2. All cartons for a country will be dispatched from Slough, packed in one shipment, but the cartons will not be physically bound together and the shipment could get separated in transit.

P3. At the same time as the shipment is dispatched, an express air-mail letter will be sent to the PCO telling of the dispatch and recording the number of cartons and the number of boxes in the shipment. On arrival of the shipment, the PCO should carefully check that the whole shipment is there and, if it is not, query the matter with the delivery agents. When the PCO is satisfied that the whole shipment has arrived, he should notify Dr. Postlethwaite of this fact.

P4. If the shipment does not arrive in a reasonable time after receipt of the air-mail express letter, the PCO should begin making urgent enquiries as to what has happened.

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STAGE 2

Count I
Section 3

1. Supervisors Answer Sheet

11. There are two sources of error among the pre-packed answers of each which the supervisors can use the office to eliminate if the contact superintendent of the PPO. However, the conditions under which these error sets will not successfully occur. These errors are as follows:

a. The first case is quite simple. If, in marking answer cards for a school, an PPO has had to enter an estimated figure for number of students (see sub-sections F3 and F4), it is quite likely that the figure be supplied will be too large and that by the time the answer cards arrive at the relevant Center (and certainly before be made ready to the school in question) he will know that he does not need, say, 5 of the sets of cards he ordered. In this case, he may discard the 5 sets he does not need (starting from the back of the pack of answer cards for the school, i.e., from the student with the highest number). For example, if for a particular school the PPO has specified an allocation of 30 students on Form 11A/1/12 (Inlet) and he later discovers, on receipt of the Student Book For., that he needs to test only 27 students, he should discard the answer cards associated with student numbers 028-030. As for the Entitled Population IV Science tests, it should be noted that the printed test to be given should accord with the number printed on the card. (See sub-section 4)

b. The second case arises where an PPO specifies that he intends to administer relevant IPD tests at the Population IV level. Such a specification will lead to a card 7 being produced for every Population IV student. Where the PPO will want to give the IPD tests only to specially selected students, the first 30 for students not falling into this category are superfluous and should be discarded.

2. Missing Answer Cards

11. It is to be sincerely hoped that there will be no missing answer cards which cannot be readily accounted for. The only case which should arise is where, for a given school, the PPO has subscribed the number of students he wants to test when completing Form 11A/1/12(Trial). In this case he should make up the requisite sets of cards from his stock of blank unmarked answer cards, writing student numbers which continue the sequence already established among the pencil cards, and write these identification numbers at the top left of the cards in the space provided.

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STAGE 2

Level 2
Section 2

POPULATION II

Booklet No.	Instrument	IEA No.	Card No.	Time	Sessions
4	Science II - Section A Science II - Section B	IEA/4A IEA/4B	3	60 min. 60 min.	1
5	Science Questionnaire Section S	IEA/5S	4	15 min.	3
	TOUS - Section T	IEA/5T		20 min.	
	Science Attitude and Descriptive - Section K	IEA/5K		15 min.	
6	Word Knowledge Section F	IEA/6F	5	10 min.	4
	General Questionnaire Section G	IEA/6G	1 sheet to be returned N.C.	15 min.	
	General Attitude and Descriptive - Section H	IEA/6H	6	15 min.	
7	Reading Comprehension Section C	IEA/7C	7	50 min.	5
	Reading Comprehension Section D	IEA/7D		50 min.	6
	Reading Comprehension Questionnaire-Section E	IEA/7E		15 min.	7
	Reading Speed (Practice) Section P	IEA/7P		10 min.	
7J	Reading Speed (Test) Section J	IEA/7J	IEA/7J to be returned to N.C.		
8	Literature II Section X, Y & Z	IEA/8 X,Y,Z	8	50 min.	8
9	Literature II Section W	IEA/9W		50 min.	9
	Literature Questionnaire Section Q	IEA/9Q		15 min.	10
	Literature Attitude Section R	IEA/9R		15 min.	

POPULATION IV

Booklet No.	Instrument	IEA No.	Card No.	Time	Sessions
10	Science IV - Section A	IEA/10A	3	60 min.	1
11	Science IV - Section B	IEA/11B P - U		60 min.	2
12	Science Questionnaire Section S	IEA/12S (Same as IEA/5S)	4	15 min.	3
	TOUS - Section T	IEA/12T		20 min.	
	Science Attitude and Descriptive - Section K	IEA/12K (Same as IEA/5K		15 min.	
13	Word Knowledge Section F	IEA/13F	5	10 min.	4
	General Questionnaire Section G	IEA/13G (Same as IEA/6G		15 min.	
	General Attitude and Descriptive - Section H	IEA/13H (Same as IEA/6H	6	15 min.	
14	Reading Comprehension IV Section C	IEA/14C	7	50 min.	5
	Reading Comprehension IV Section D	IEA/14D		50 min.	6
	Reading Comprehension Questionnaire-Section E	IEA/14E (Same as 7E)		15 min.	7
8	Literature Section X Y Z	IEA/8 XYZ	8	50 min.	8
9	Literature - Section W	IEA/9W		50 min.	9
	Literature Questionnaire Section Q	IEA/9Q		15 min.	10
	Literature Attitude Section R	IEA/9R		15 min.	

NATIONAL OPTIONS IVS

Booklet No.	Instrument	IEA No.	Card No.	Time
15	Biology - Bio	IEA/15	9	60 min.
16	Chemistry - Che	IEA/16		60 min.
17	Physics - Phy	IEA/17		60 min.
18	Literature - open-ended (Hemingway)	IEA/18		60 min.

SCIENCE PRACTICALS

19	Science Practical II	IEA/19		90 min.
20	Science Practical IV	IEA/20		90 min.
21	Science Practical IV Biology	IEA/21		90 min.
22	Science Practical IV Chemistry	IEA/22		90 min.
23	Science Practical IV Physics	IEA/23		90 min.

The testing times for Population III will be the same as those for Population II and IV. National Centers testing Populations IVS will require 1 additional hour of testing each for students taking Biology, Physics, Chemistry and Literature. National Centers giving the Practical Science Tests must arrange separate sessions for these.

5. Sequence of Testing

The sequence in which tests, questionnaires, etc, are administered should correspond to the order in which the sessions are listed in the previous tables. It is suggested, for example for Population II, that the two science tests (sessions 1 and 2) can be administered in the morning, possibly with a 15 minute break between sessions. Sessions 3 and 4 can be administered in the afternoon, possibly with a short break between sessions.

For countries also taking Reading Comprehension and for countries taking Reading Comprehension and Literature, it is suggested that the testing sessions for these separate subjects be held on different days. National Centers should put the timetables they arrive at for their national testing into their Manual 2 for School Co-ordinators.

Special Note: National Centers taking up the option of testing Population IV2 may encounter the following situations:

Science:

(1) Some students will only be taking one of the IV2 tests (i.e. Biology or Chemistry or Physics), other students, however, will be taking two or more tests of these specialist tests.

(2) If sub-sampling in Population IV has occurred, it is possible that there will be some students to be included in the IV2 sample who will not have been in Population IV sample, and hence will not have taken either the Science or the General Student Questionnaire. (See Section 1, 3).

To overcome these problems the following solutions are suggested:

1. Administration. It is suggested that all IV2 Science students are seated together for the first testing session, taking whichever test is appropriate for them (i.e. Biology, Chemistry or Physics). For the second hour of testing only those students taking a second test remain, the others having been let out of the testing room. Similarly for the third hour, if necessary.

It is further suggested that a duplicate will then accompany the Student Questionnaire (which is Population III records) to enable them to complete theirs.

7. Data Processing. In order with the problem of linkage between a student's responses on the IT answer sheet and the ITO answer sheet, it is suggested that the latter be also returned to the IEA computation centre. A master file will then be compiled which will include both the IT and the ITO data. For the overall international processing a working file will be produced for Population II only. National Centres may, on request, obtain a copy of the complete master file, the working file for it and for the raw data for ITO. Note: It is envisaged that some analyses for Population III tests can be done at the International Centre.

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STAGE 2

43

[illegible]

[illegible]

Checklist of Activities

1. See that all necessary information [illegible] has been collected (sub-sections A and B)
2. Check that all interest has been [illegible] (sub-section C)
3. Carry out necessary journeys (sub-section D)
4. Carry out necessary questions on [illegible] (sub-sections A - E)
5. Pick cards to return to IAL Control (sub-section G)
6. Ship cards to proper addressee (sub-section H)
7. Send all necessary information to [illegible] (sub-sections A and B)

STAGE 2

[illegible]

SECTION I

[illegible]

[illegible]

1. [illegible]

   a. [illegible]

      i. [illegible]
      ii. [illegible]
      iii. [illegible]
      iv. [illegible]
      v. [illegible]

2. [illegible]

   a. [illegible]

   b. [illegible]

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible]

[illegible]

[illegible]

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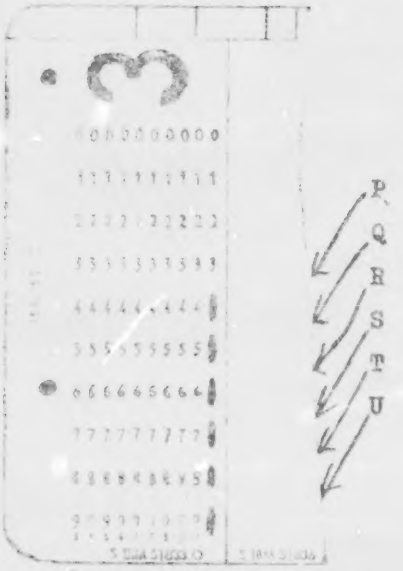

Diagram C401

Simplified codes for marking up alphabetic characters on Cards 3 and 8.

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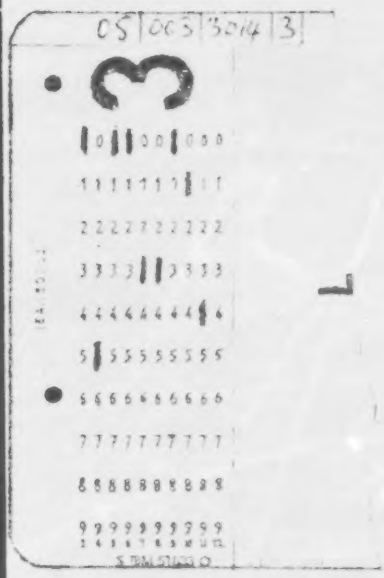

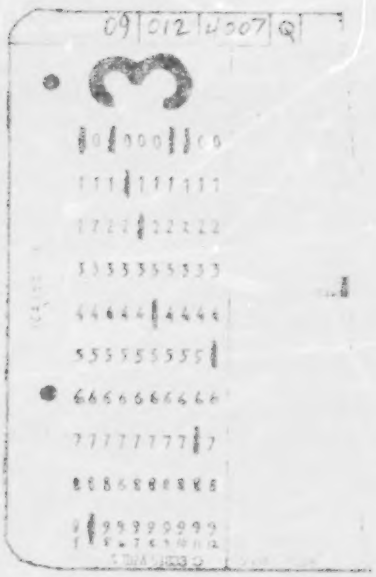

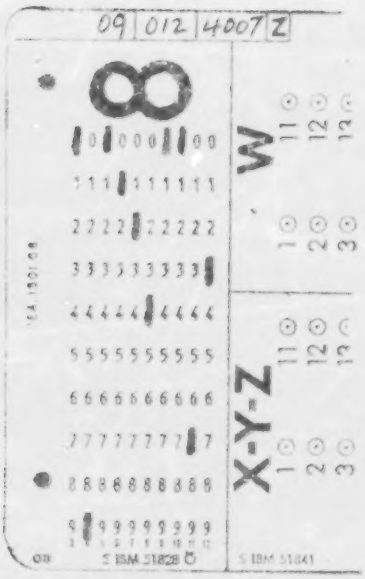

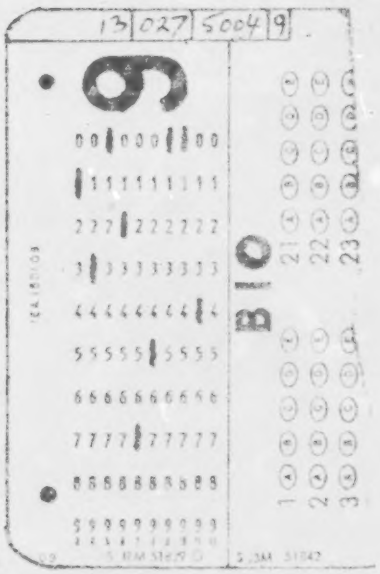

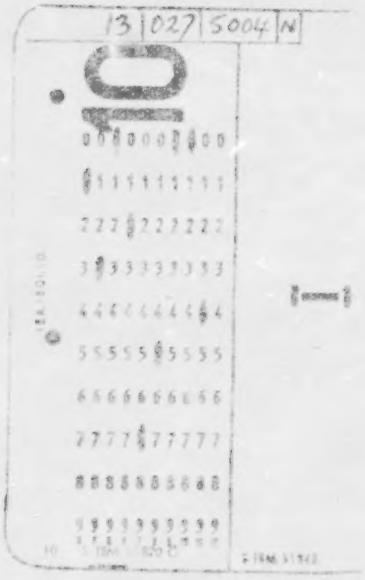

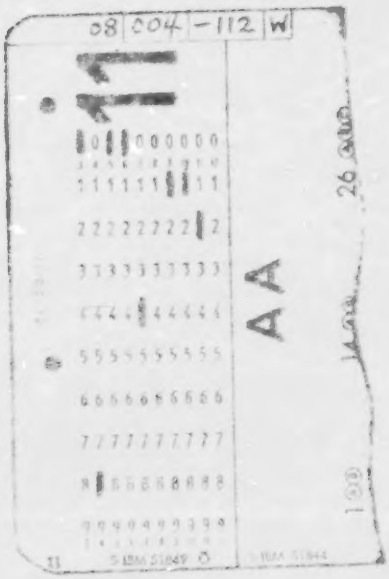

Diagram C4Oii

Further examples of card identifications marked up by hand.

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K5. Once identifications have been hand-marked in the ways described above, the cards involved need not be kept separate from the rest of the answer cards (with pre-punched identifications) and may be mingled together in any way convenient to the National Center.

L. Packaging of Despatch

L1. The natural way in which returned answer cards will be dealt with at the National Center will be by school, since it will be usual for all the material for a particular school to be returned at the same time. It is therefore recommended that cards be grouped together by school as they are prepared for despatch to the International Center. Note, however, that the order of cards within schools is not prescribed. If it is not convenient for a National Center to group cards by school, it will cause no trouble whatsoever at the International Center if they are grouped in the most convenient manner for the National Center.

L2. As answer cards emerge from the series of operations described above (sub-section E), they should be packed into boxes in just the same way as they were when they arrived (see Section 3, sub-section O). When enough boxes have been assembled, they should be packed into cartons. The whole process should be carried out sequentially and the cartons and boxes labelled exactly as in Section 3, sub-section N2.

L3. The stores of blank answer cards (the remains of the extra 10% of cards) held at the National Centers should not be returned to the International Center.

M. Shipment of Answer and Punched Cards

M1. Shipments of answer cards should be sent to:

Dr. T.N. Postlethwaite
IEA
Wenner-Gren Center
Sveavägen 166 (8 TR)
S-113 46 Stockholm, Sweden

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M2. Shipments of punched cards should be sent to:

IEA
Box 33
Teachers College
525 120th Street
New York, New York 10027
USA

M3. Great care should be taken not to mix punched cards with answer cards (note that they have to be sent to separate addresses).

M4. National Centers should also make sure that they always retain a duplicate copy of any set of punched cards which they despatch to IEA Central.

N. Paperwork to Accompany Shipments

N1. Each time a shipment of answer cards or punched cards is despatched, a letter should be sent to Dr. Postlethwaite announcing this fact. The letter should contain the following items of information:

a. What the cards are
b. Approximately how many they are
c. How many cartons and boxes they have been packed into.

STAGE 2

IEA/T-1

5N

IEA SIX-SUBJECT SURVEY MANUALS

The basic procedures to be followed in the main testing of the IEA Six-Subject Survey were set out in a series of manuals:

Stage 2: IEA/N1 Manual for National Centers
IEA/N2 Manual for School Coordinators
IEA/N3 Manual for Test Administrators

Stage 3: IEA/N1/Stage 3 Manual for National Centers
IEA/N2/Stage 3 Manual for School Coordinators
IEA/N3/Stage 3 Manual for Test Administrators

The Six-Subject Survey Instruments are available from ERIC Clearinghouses.

In the Six-Subject Survey Data Bank, every questionnaire and test item used is identified by a unique short variable name; the majority of these are formed from the new instrument number (which identifies the IEA instrument by type, population in which used, and subject) and the respective item number within the instrument. However, the instrument number used in the IEA manuals is the number which was in use at the time of testing. There follows the key to the new instrument numbers, then a listing of the old numbers used in the manuals with the new ones used in the Data Bank.

1: Type of Instrument

E = Examination (student)
Q = Questionnaire (student)
T = Teacher questionnaire
S = School questionnaire

2: Student Population

1 = I	6 = II and IV
2 = II	7 = I, II and IV
3 = III	8 = I and IV
4 = IV	9 = IV Specialist
5 = I and II	A = AA: Teacher or School questionnaire

3: Subject

S = Science
R = Reading Comprehension
L = Literature
M = Mother Tongue (Reading Comprehension and Literature)
E = English as a Foreign Language
F = French as a Foreign Language
C = Civic Education
2 = All Stage 2 Subjects
3 = All Stage 3 Subjects
5 = All Stage 2 and Stage 3 Subjects

4-5: Instrument Within Type

One or two characters used when necessary to uniquely identify each instrument where there is more than one instrument of the same type.

Primary Tests

Item IR No.	IEA Booklet	Population	Title
S10A	IEA/1 A	I	Science Test Section A
S10B	IEA/1 B	I	Science Test Section B
S20A	IEA/4 A	II	Science Test Section A
S20B	IEA/4 B	II	Science Test Section B
S40A	IEA/10 A	IV	Science Test Section A
S40B	IEA/11 B	IV	Science Test Section B, Nonrotating Items
S40F	IEA/11 B (F)	IV	Advanced Science Rotating Items, Set F
S40G	IEA/11 B (G)	IV	Advanced Science Rotating Items, Set G
S40H	IEA/11 B (H)	IV	Advanced Science Rotating Items, Set H
S40I	IEA/11 B (I)	IV	Advanced Science Rotating Items, Set I
S40T	IEA/11 B (T)	IV	Advanced Science Rotating Items, Set T
S40U	IEA/11 B (U)	IV	Advanced Science Rotating Items, Set U
S30B	IEA/15	IVS	Specialist Biology
S30C	IEA/16	IVS	Specialist Chemistry
S30P	IEA/17	IVS	Specialist Physics
S20I*	IEA/19	II	Science Practical II
S40I*	IEA/20	IV	Science Practical IV
S40IB*	IEA/21	IV	Biology Practical IV
S40IC*	IEA/22	IV	Chemistry Practical IV
S40IP*	IEA/23	IV	Physics Practical IV
S30N	IEA/5T	II	TEST-Understanding the Nature of Science
S40N	IEA/12T	IV	TEST-Understanding the Nature of Science

Science Student Questionnaires

Q60S	IEA/1 S IEA/12 S	II, IV	Science Questionnaire
Q60K	IEA/1 K IEA/12 K	II, IV	Science Attitude and Descriptive Scales (also the Place of Science in the School and in the World Outside)
Q10K	IEA/14	I	Science Attitude and Descriptive Scales (also the Place of Science in the School and in the World Outside)

*Practical tests were used only in Japan Population II and England Populations II and IV. These data will not be incorporated within the Subject Data Bank.

Science Service Organizations

Key to Ex.	Test Battery	Population	1. Title 2. [illegible]
SWSS	SAA/TSF	Not Applicable	1. Student Questionnaire 2. Personal Services
SWSV	SAA/VCS/JV	Not Applicable	1. Views on the Teaching of Science/Views on Empirical Work 2. Work

Reading Comprehension Tests

RSAC	SAA/SC	I	1. Reading Comprehension Test, Section C
RSBD	SAA/SD	I	1. Reading Comprehension Test, Section D
RSAS[b]	SAA/SF	I, II	1. Reading Speed Exercise Test, Sections D
RSAT	SAA/SF	I, II	1. Reading Speed Test
RSBC	SAA/SC	II	1. Reading Comprehension Test, Section C
RSBD	SAA/SD	II	1. Reading Comprehension Test, Section D
RSAC	SAA/SAC	IV	1. Reading Comprehension Test, Section C
RSBD	SAA/SAD	IV	1. Reading Comprehension Test, Section D

Reading Comprehension Shorter Questionnaire

QSA	SAA/TQ SAA/SAQ	II, IV	1. Student Reading Comprehension Questionnaire

Reading Comprehension and Literature Shorter Questionnaire

TQSF	SAA/TQS	Not Applicable	1. Shorter Questionnaire: Science Longer (Reading Comprehension and Psychological Scales)

Literature Tests

WSLF	SAA/TF	II, IV	1. "The Two of Hyena", Selected Information Test
WSLF	SAA/TF	II, IV	1. "I Bus Bus Stops", Selected Information Test
WSLH	SAA/TH	II, IV	1. "The Man by the Riverside", Selected Literature Test
WSLW	SAA/SW	II, IV	1. "The Sea", Literature Test
WSLH[b]	SAA/SH	II, IV	1. Short-ended Literature Test (The Use of Searching")

[a] Not used for data collection.

[b] Data not available within the Subject Data Bank.

Volunteers Student Exchanges

Item ID No.	Tel. No.(s)	Description	Title
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

[illegible] [illegible] [illegible] [illegible] [illegible]

Work Knowledge Books

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Seasonal Student Exchanges

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

Seasonal Tractor Exchanges

[illegible]	[illegible]	[illegible]	[illegible]

School Exchanges

[illegible]	[illegible]	[illegible]	[illegible]

[illegible] [illegible] [illegible] [

10. Teacher Questionnaires

The School Coordinator is responsible for passing on the Teacher Envelopes to the appropriate teachers and to do everything possible to ensure their return, completed. (Each teacher is expected to fill in only two or three of the parts of the questionnaire. The parts which are appropriate are explained on the questionnaires themselves). Teachers should be requested to insert their completed answer cards into the Teacher Return Envelope which can then be sealed.

The School Coordinator should collect the Teacher Return Envelopes for return to the National Center.

11. School Questionnaire

The School Coordinator is responsible for the completion of the School Questionnaire. It is possible that several senior members of the school staff including the school principal himself (if he, in fact, is not the coordinator) will need to be consulted. When completed, the School Questionnaire should be held ready for return to the National Center.

12. "Opportunity" to Learn

In addition to the questionnaires which are completed by teachers, it will be necessary to obtain a rating for each item in the Science tests. The rating for each item should be the collective judgement of the Science teachers. They are asked to estimate what proportion of the students in a particular target population in the school have had the opportunity to learn what is being tested by each item. In arriving at these judgements, the Science teachers should give particular attention to the process the student would have to go through to answer the question rather than the detailed content of the questions. For example, if an item required the student to calculate the change in pressure when the volume of a given quantity of gas is tripled at constant temperature, then it is the application of Boyle's Law that is being tested rather than the mere manipulation of the particular numerical quantities involved.

The Science teachers to be brought together to rate the items for any one population are those teaching Science to the students in the grade where most of the students in the target population are to be found (i.e. Population II consists of 14 year olds on the day of testing. Thus the appropriate grade is that in which most of the 14 year olds are to be found). In some schools, for example, there

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maybe two target populations being tested (e.g. Population II and IV). In this case the school co-ordinator must have two separate meetings. Before assembling the Science teachers, the School Co-ordinator should ensure that he has sufficient numbers of the Science tests to be rated and the appropriate School Opportunity to Learn card (see 3(h) above).

The appropriate card to use can be determined from the last five digits of the identification number and the following:

Population	Card Type	ID Number (last 5 digits)
I	1	..... 1000D
II	3	..... 2000D
III	3	..... 3000D
IV	3	..... 4000D
	9	..... 4000E

Note that there are two cards for use with Population IV. On card 9 only certain items will be rated.

National Centers are to explain this in complete detail. As a National Option, National Centers can have the 120 IVS items rated as for Population IVS and recorded on Card 9. (In this case National Centers have to order answer cards from John Hall.)

Note: National Centers must also indicate here what it has decided about the rating of Population IV and Population IVS Science items. For Population IV, the possiblities are:

a) Rate the first 54 items only in Population IV

b) Rate the first 54 items and then the rotated items on Card 9 as items 1-36 (i.e. P25 as item 1, down to U30 as item 36)

c) Rate the first 54 items and then all the items in the Specialist tests as for Population IV on card 9.

The following should be read to the assembled Science teachers and the school co-ordinator should blacken in the chosen responses on the answer card.

SCIENCE TESTS

The Science tests being administered to the students in your school are international - that is to say, they have been constructed so that they can be given to a variety of schools in many countries. Inevitably this has meant that some questions will be asked that will not have been covered by the students in some schools. It is therefore important for us to know whether or not the topics covered by the questions have in fact been taught to the students taking the tests in your school.

You each have copies of the Science tests that are being given to the students in yourschool. For each target population [National Centers to enter definition of target populations here] we would like the teachers who are teaching Science to the appropriate grade group

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(i.e., the grade in which most of the students of a particular target population are to be found) collectively to decide whether or not the topic covered by each question in the tests ~~is included in the syllabus of for~~ has been taught in the course that grade group (or preceding grades) in your school. It is appreciated that all the students may not have reached a topic. In order that the rating described below for each question is the collective judgement of the appropriate teachers, I have been asked to arrange this meeting.

We will read each question in turn, and make a judgement according to the following scale:

A. All students in the appropriate grade group have covered the topic embodied in this item.

B. More than 75% of the students in the appropriate grade group have covered the topic embodied in this item.

C. Between 25% and 75% of the students in the appropriate grade group have covered the topic embodied in this item.

D. Less than 25% of the students in the appropriate grade group have covered the topic embodied in this item.

E. None of the students in the appropriate grade group have covered the topic embodied in this item.

(Note: The judgements recorded should apply to all students at the appropriate grade and not just those being tested.)

The answer cards should be returned in their envelope to the National Center.

13. Returning Materials to National Center

The School Co-ordinator is responsible for the prompt return of materials to the National Center. All the Student Envelopes, Teacher Return Envelopes and the completed School Questionnaire together with the Student Name form and the Teacher Name Form should be packaged into one parcel and returned to the National Center. Strong packaging must be employed to prevent any damage (bending, tearing, etc.) to answer cards.

All the other materials, (i.e. booklets collected at the end of testing sessions, and remaining spare copies) should either be returned by separate mail to the National Center, or destroyed.

N.C.s are to insert here the appropriate arrangements.

14. Reporting Results to Schools

Regrettably it is not possible for all the many thousands of teachers who have taken part in this research to be thanked personally. However, it is hoped that the School Coordinator will pass on the thanks of the National Center to all those who have assisted.

The information which is being returned from each participating school will in due course, find its way into computer storage at the IEA Computation Center.

The processing of all the information received from approximately half a million students from 16,000 schools in nineteen countries will naturally take some time. It is intended, however, that in due course a report will be sent to each school giving the test results obtained by the students in that school. Comparative information will be supplied showing the performance of that school with other schools in their own countries and other countries.

IEA SIX-SUBJECT SURVEY MANUAL

The basic procedures to be followed in the main testing of the IEA Six-Subject Survey were set out in a series of manuals:

Stage 2 IEA/TC Manual for National Centers
IEA/SC Manual for School Coordinators
IEA/TA Manual for Test Administrators

Stage 3 IEA/TC/Stage 3 Manual for National Centers
IEA/SC/Stage 3 Manual for School Coordinators
IEA/TA/Stage 3 Manual for Test Administrators

The Six-Subject Survey Instruments are available from ERIC Clearinghouse.

In the Six-Subject Survey Data Bank, every questionnaire and test item used is identified by a unique short variable name; the majority of these are formed from the new instrument number (which identifies the IEA instrument by type, population in which used, and subject) and the respective item number within the instrument. However, the instrument number used in the IEA manuals is the number which was in use at the time of testing. Here follows the key to the new instrument numbers, then a listing of the old numbers used in the manuals with the new ones used in the Data Bank.

1: Type of Instrument

E = Examination (student)
Q = Questionnaire (student)
T = Teacher questionnaire
S = School questionnaire

2: Student Population

1 = I
2 = II
3 = III
4 = IV
5 = I and II
6 = II and IV
7 = I, II and IV
8 = I and IV
9 = IV Specialist
A = AA: Teacher or School questionnaire

3: Subject

S = Science
R = Reading Comprehension
L = Literature
M = Mother Tongue (Reading Comprehension and Literature)
E = English as a Foreign Language
F = French as a Foreign Language
C = Civic Education
J = All Stage 2 Subjects
K = All Stage 3 Subjects
L = All Stage 2 and Stage 3 Subjects

4-5: Instrument Within Type

One or two characters used when necessary to uniquely identify each instrument where there is more than one instrument of the same type.

Science Tests

New TM No.	Old No.(s)	Population	Title
T10A	IEA/1 A	I	Science Test Section A
T10B	IEA/1 B	I	Science Test Section B
T05A	IEA/5 A	II	Science Test Section A
T05B	IEA/5 B	II	Science Test Section B
T04A	IEA/10 A	IV	Science Test Section A
T04B	IEA/11 B	IV	Science Test Section B, Nonrotating Items
T04P	IEA/11 B (P)	IV	Advanced Science Rotating Items, Set P
T04Q	IEA/11 B (Q)	IV	Advanced Science Rotating Items, Set Q
T04R	IEA/11 B (R)	IV	Advanced Science Rotating Items, Set R
T04S	IEA/11 B (S)	IV	Advanced Science Rotating Items, Set S
T04T	IEA/11 B (T)	IV	Advanced Science Rotating Items, Set T
T04U	IEA/11 B (U)	IV	Advanced Science Rotating Items, Set U
T20B	IEA/15	IVT	Specialist Biology
T20C	IEA/16	IVS	Specialist Chemistry
T20P	IEA/17	IVS	Specialist Physics
T05X*	IEA/19	II	Science Practical II
T04X*	IEA/20	IV	Science Practical IV
T04XB*	IEA/21	IV	Biology Practical IV
T04XC*	IEA/22	IV	Chemistry Practical IV
T04XP*	IEA/23	IV	Physics Practical IV
T20N	IEA/30	II	TIMS-Understanding the Nature of Science
T40N	IEA/12N	IV	TIMS-Understanding the Nature of Science

Science Student Questionnaires

Q10S	IEA/5 S IEA/11 S	II, IV	Science Questionnaire
Q11K	IEA/5 K IEA/12 K	II, IV	Science Attitude and Descriptive Scales (also the Place of Science in the School and in the World Outside)
Q10K	IEA/1C	I	Science Attitude and Descriptive Scales (also the Place of Science in the School and in the World Outside)

*Practical tests were used only in Japan Population II and England Populations II and IV. These data will not be incorporated within the Six-Subject Data Bank.

Science Teacher Questionnaire

New ID No.	Old Do-It	Population	Title
[illegible]	[illegible]	Not Applicable	Teacher or Questionnaire: Science or Section
[illegible]	[illegible]	Not Applicable	Views on or the Practice of Mathematics or Functional Work

[illegible]

Reading Comprehension Tests

[illegible]	[illegible]	I	Reading or Comprehension Test, Section or I
[illegible]	[illegible]	I	Reading or Comprehension Test, Section or I
[illegible][b]	[illegible]	I, II	Reading or Speed Practice Test, In Section F
[illegible]	[illegible]	I, II	Reading or Speed Test
[illegible]	[illegible]	II	Reading or Comprehension Test, Section or I
[illegible]	[illegible]	II	Reading or Comprehension Test, Section or I
[illegible]	[illegible]	IV	Reading or Comprehension Test, Section or I
[illegible]	[illegible]	IV	Reading or Comprehension Test, Section or I

Reading Comprehension Student Questionnaire

[illegible]	[illegible] [illegible]	II, IV	Student or Reading Comprehension Questionnaire

Reading Comprehension and Vocabulary Teacher Questionnaire

[illegible]	[illegible]	Not Applicable	Teacher or Questionnaire: Method To Engage Reading Comprehension and Vocabulary Course

Vocabulary Tests

[illegible]	[illegible]	II, IV	"[illegible] of Words", Advanced Vocabulary Test
[illegible]	[illegible]	II, IV	"I See A Big [illegible]", Advanced Vocabulary Test
[illegible]	[illegible]	II, IV	"[illegible] or the Possible", Advanced Vocabulary Test
[illegible]	[illegible]	II, IV	"[illegible]", Vocabulary Test
[illegible][b]	[illegible]	II, IV	Open-ended Vocabulary Test ("[illegible]")

[illegible]

[b] Not used for data collection.

[illegible] Data not available within the Subject Data Base.

STAGE 3
18.7.90.

Graduate Studies Curriculum

New GS No.	Old GS/UC	Description	Units	V.C
GS1xx	3xx/5xx	Ph.D. or	Graduate Alternative Dissertation	
GS1x0	3xx/5x0	Alternative, Graduate Studies		

GROUP 1 INTRODUCTORY COURSES IN SCIENCE, ENGINEER COMPREHENSIVES, AND DISSERTATION

Basic Foundation Units

GC1xx	3xx/5x0	1	Basic Introduction Year
GC2xx	3xx/5x0	2C	Basic Knowledge Unit
GC3x0	3xx/5x0	3C	Basic Knowledge Unit

Research Student Specialisations

GC4x0	3xx/5x0	1	Graduate Specialisation, Research Doctrine
GC5x0	3xx/5x0 3xx/5x0	2C, 2P	Graduate Specialisation, Research Doctrine
GC6x0	3xx/5x0	1	Research Doctrine and Investigative Studies
GC7x0	3xx/5x0 3xx/5x0	2C, 2P	Research Doctrine and Investigative Studies

Research Doctoral Specialisation

GC8x	3xx/5xp	Ind. Application	Graduate Specialisation, Research Doctrine

Doctoral Specialisation

GC9x	3xx/5xp	Ind. Application	Doctoral Specialisation

[illegible]

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6. Continue as follows:-

"Now look at the front cover of booklet 1. Follow carefully while I read the directions to you."

Read the directions to the group, giving them time to mark the answers to the practice questions when these are reached.

Directions:-

"This test contains questions dealing with different branches of Science. Some you will know from your school work, some from your general knowledge and others you will be able to answer by using common sense. Others you may not be able to do. Do not waste time over questions you cannot do; leave them and go on to the next question. You can come back to questions you have missed later, if you have time. You may answer even if you are not quite sure, but do not guess blindly.

Each of the questions or unfinished statements in this test is followed by five suggested answers, lettered A, B, C, D or E. You have to decide which one answer you think best and then on your answer card make a solid pencil mark in the oval containing the correct answer letter.

Here is an example of how to fill in the answer on your answer card. Remember that the examples given on this page are to be answered in the section marked 1 on your answer card.

1. How long does the earth take to travel once around the sun?

A. A day
B. A week
C. A month
D. A year
E. None of the above

Since the earth travels around the sun in a year, the answer space D should be marked. This has been done on the answer card for question 1 in the example section 1.

Now try these three questions for practice. Fill in the space of your chosen answer on the answer

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Allow one or two minutes for students to complete practice items.

Then say:-

"The answer to question 2 is B. Therefore you should have marked the space B on your answer card.
The answer to question 3 is C. Therefore you should have marked the space C on your answer card.
The answer to question 4 is A. Therefore you should have marked the space A on your answer card."

It is important to ensure that all students mark their answers in the correct way and in the right place.

Then say:-

"Are there any questions?

Answer any questions about the procedure of taking the test and marking the answers.

7. Continue as follows:-

"We are now ready to start Section A. The answers to the first test are to be placed in the section marked "A" on your answer card."

Indicate the appropriate section of the answer card.

Then say:-

"If your pencil breaks, please put up your hand immediately, and I will give you another pencil. You will have 30 minutes for the test. Work as quickly as you can. Do not waste time if you cannot answer a question, but leave it and go on to the next. Open your test booklet and begin."

Note what the time is when the group starts, also what time it will be after 15 and 25 minutes have passed.

After 15 minutes say:-

"About half the time has gone. Remember, do not waste time on the questions you do not know how to do".

After 25 minutes say:-

"You have about 5 minutes more. Have a look at any questions you haven't yet tried, to see if you know how to do some of them."

After 30 minutes say:--

"Time is up. Stop working and put your pencil down. You will have a few minutes rest. Do not touch your test booklet or answer card."

card in section A."

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After a few minutes (National Centers should suggest an appropriate length of time) say:-

"We are now ready to start Section J. The answers to questions in this section are to be marked in part J of your answer card."

Indicate section J of the answer card. Then say:-

"You will have 30 minutes for this test. Remember, do not waste time if you cannot answer a question, but leave it out and go on to the next. Turn to the next page in your booklet and begin."

Note what the time is when the group starts, also what time it will be after 15 minutes and 25 minutes have passed. After 15 minutes say:-

"About half the time has gone. Remember, do not waste time on the questions you do not know how to answer."

After 25 minutes say:-

"You have about 5 minutes more. Have a look at any questions you haven't yet to see if you know how to answer some of them".

After 30 minutes say:-

"Stop working and put your pencil down. You will now have a few minutes rest. Do not touch your test booklet or answer card."

After a few minutes say:-

"We are now ready to start Section K, which is the next section in your booklet. The answers to this section are to be marked in part K on the other side of your answer card."

Indicate part K of the answer card.

8. "Follow the directions on the first page of section K as I read them to you. These questions are being given to a number of children in several countries to find out what they think about science and the part it plays in their lives. For most of the questions there are no right or wrong answers so this is not a test. We just want to know what you think. When you are told to do so, work through the questions, indicating the answers you want to give. The answers should be put in Section K on your answer card. Now turn the page to the first set of questions and begin."

9. When all the students have completed Section 2, tell them to replace the answer card in the small envelope. The test booklet and the small envelope should now be put back into the large envelope, which can be left on the desk or table to await the next testing session. (National Centers may wish to have the envelopes collected if the next testing session will not be until a much later time.)

Session 2 (35 minutes)

10. The students should be seated in the same way as before, and the test administrator should ensure that each student has his envelope on his desk in front of him.

11. Then say:

"From your large envelope take out booklet No. 2. In this session you will not need an answer card - you will mark your responses in your booklet by circling the response you choose."

Make sure that the students have taken out the right booklet. Then say:-

"In this test words are given to you in pairs. You must decide whether the words have nearly the same meaning or nearly the opposite meaning. If you think the words have the same meaning, draw a ring round the symbol "+". If you think the words have the opposite meaning, draw a ring round the symbol "0" in your booklet. Here is an example:"

Put the following example on the blackboard like this:

high low + 0

Then say:

"The two words "high" and "low" both refer to height. However, they are nearly opposite in meaning. Therefore, you should draw a ring round the symbol "0" like this."

Here draw a ring round the symbol "0" on the board.

Then say:-

"If you change your mind, remember you must cross the ring completely and then put a ring round your other choice. Are there any questions?"

Answer any questions. Try to be sure that all students understand how they are to mark their answers.

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12. Continue as follows:

"You will now be allowed ten more tests. Work as quickly as you can, but do not waste time on words you do not know. You may move to the first word in Part 2 and to the questions in section C."

Note what time it is when the proctor starts. After 5 minutes say:

"Almost half the time is gone."

After 10 minutes say:

"Stop working on [illegible] words."

13. Then say:-

"Now, questions in the next section. Section C. Are there any you do not understand? Answer them as accurately as you can. If you have any difficulty about understanding what is meant by a particular question, please ask me. It is important to try to answer all the questions, even if you are not sure. Now turn to the next page and begin Section C."

[illegible] may be given to any students who appear to be in difficulty. It will be noted that the first few questions require in some cases what may be inaccurate responses. Every assistance should be given to obtain this one. Please answer, as far as possible, that every student has given a response to every question. (Turn to Section C. Correct the questionnaire. General notes I can't see what the instructions, if appropriate.)

14. After all students have completed Section C, say:

"Now is the end of Section C. We are now ready to start Section D. Again the directions on the first page of questions. Read them to yourself. These questions are being put to a large number of students in different countries to find out what they think about themselves and the people they mix with. This is not a test. There are no right or wrong answers. We just want to know what you think. Your teacher will not see your answers. Read each of the questions, and then decide the answers you want to give by putting the number you choose. Now turn the page and begin. When everyone has finished, fill the students to continue [illegible] to the envelope.

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Control 3 (if needed)

15. The students should be seated in the same way as before, and the test instructions (on student sheets) should be read while he is working on the desk in front of him.

17. Say:

"From your large envelope take out booklet 3. From the small envelope take out the pink answer sheet labeled 2. A pencil will be used for answers. Put the small envelope back inside the large envelope and place it at the top of your desk (task)."

A check should now be made to see that all students have ready booklet 3 and Card 2.

Then say:-

"We are now going to do some tests to see how well you understand what you read. You should mark the answers on your answer card in the same way as you did for the letters tests. Now look at the front of booklet 3 and follow while I read the instructions. This test is made up of four stories with a number of questions on each. Read the first story and then answer the questions on it. Then go on to the second story and so on until you come to the end of Section C. Each question has four possible answers. Find the best ending or answer and blacken the oval on the answer card which has the same letter as the answer you have chosen. You may read the story over again as often as you need to. Try each question in turn. If you don't know the answer, leave it and go on to the next question. You may come back to it later if you have time. Guess answer even if you aren't quite sure. However, do not waste time. When you finish one story go on to the next. Continue until you reach the end of Section C. If there is time left, go over your try to see that you haven't..."

17. Then say:-

"You have 45 minutes to finish. Now turn to page 1 of your answer card to the section marked 'C'."

STAGE 2
MANUAL 3

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3-3

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waste time on questions you do not know how to answer."

After 55 minutes say:-

"You have about 5 minutes more. Take a look at any questions you have not tried yet to see if you know how to answer them."

After 60 minutes say:-

"Stop working and put your pencils down."

26. Tell the students to replace the answer card in the small envelope with the answer cards. Then tell them to put the test booklet and the small envelope in the large envelope. This is the end of Session 2.

Session 3 (50 minutes)

27. The students should be seated in the same way as before and the test administrator should ensure that each student has his own envelope in front of him on the desk.

28. Now say:-

"Take out booklet 5 from your envelope. Also, take the pink answer card 4 from the small envelope of answer cards."

Check to see that the students have taken out the appropriate booklet and answer card.

29. Now say:-

"Booklet 5 contains a number of questions about you and your study of Science. It is not a test. You are to answer the questions in this section as accurately as you can. You will record your answers to the questions in this section on answer card 4 in Section 5 on the front of your card. As before, you will indicate your answers by blackening in the oval that corresponds to the answer you chose."

Make sure that all students know where to record their answers on the answer card. Ask the students if they have any questions.

Then say:-

"Turn over the page and begin."

30. After all the students have completed Section 5, say:-

"That is the end of Section 5. We are now ready to start Section 6.

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The questions in this section deal with how
scientists work. In answering the questions,
read each question, choose the best answer and
mark your choice in Section 2 on the answer sheet.
Are there any questions?"

Make sure that students understand what they are to do.
Then say:-

"Begin working."

After 15 minutes say:-

"About half the time is gone. However, do not
worry if a lot of the questions you do not know how
to do."

After 20 minutes say:-

"Stop working and put your pencils down. You will
now have a few minutes rest. Do not touch your test
booklet or answer sheet."

After a few minutes (Optional teachers should suggest an
appropriate length of time) say:-

"Turn over your answer sheet to Section 2. Be sure
you ready to start Section 2. In this section you
will mark your answers to the questions in the
paperback booklet in Section 2 on the answer sheet."

Point out Section 2 on the answer sheet.

"You will have about 15 minutes to answer the
questions in this section. Read the directions on
the first page of Section 2. When you have finished,
turn over the page and begin. Section 2 is the last
section in this booklet. You are to answer all the
rest of the questions in this booklet and mark your
answers in Section 2 on your answer sheet."

31. When all students have completed Section 2, tell them
to enclose the answer sheet in the small envelope. The
test booklet and the small envelope should then be put
back into the large envelope which can be left on the
desks or tables, to await the next testing session.
(Optional teachers may wish to issue an instruction to
collect the envelopes, if the next testing session is
at a much later time.)

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After he leaves says:

"Put your head and your pencils down."

"Now questions 41 to 45 [section E] are about you and how you do. Answer them as honestly as you can. If you have any difficulty in understanding what is meant by a particular question, please tell me. The numbers in the questions go from 1 to 5 [point to the numbers in the booklet]. Circle number one if the question is not like me at all, number 2 if it is a little like me, number 3 if it is sometimes like me, number 4 if it is like me, and number 5 if it is very much like me. Please answer all the questions as quickly as you can. Don't spend too much time on any one question. Are there any questions?"

After the students have had a chance to ask their questions, says:

"Now continue on to the rest of the questions in section E and be sure to answer all of the questions in section E on the front of the booklet."

Indicate finished E on the answer sheet.

"Are there any questions?"

Answer any questions. Then says:

"Turn to page 7."

After all the students have completed section E, says:

"This is the end of section E. Now open the large envelope and take out the small one which contains the answer sheet. Take out the white answer sheet [point to it]. Now put the smaller envelope inside the larger envelope and close it. Put the end of your thumb [exhibit]."

"We are now ready to start section F. Unless the directions in that part of section F say I read them to you. Those questions are asking you to answer a large number of questions in different countries to find out what they think about themselves and the schools they attend. There are no right or wrong answers. We just want to know

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If any student finds that his answer card does not match his test, then the test administrator should correct the discrepancy by giving him a correct booklet. The student should not be allowed to change answer cards. When all students are ready, say:-

"In this booklet there is a short story. Read the story carefully and thoughtfully before going on to the questions about it. Read the questions carefully and answer them as thoughtfully and accurately as you can. The questions are preceded by instructions which you should follow. All your answers should be marked on your answer card in the section marked Y - Y- 5. Although the answer card has spaces for 40 answers the test has fewer than 40 questions, so do not be worried by the blanks you will have at the end. You will have fifty minutes to do this test. Are there any questions?"

Answer any questions and make sure that the students know what they are to do. Then say:-

"Turn over the page and begin."

After twenty-five minutes say:-

"About half the time has gone. Remember do not waste time on any questions you do not know how to answer."

After forty-five minutes say:-

"You have five minutes more. If you have not answered question 1, which comes at the end, please do so now. If after doing this you have any time left, you may go back to any questions you have not answered."

After fifty minutes say:-

"Stop working and put your pencils down."

Tell the students to put answer card B and the test booklet into the large envelope. That is the end of the session. (National Centers may wish to issue an instruction about the collection of materials at this time.)

Session 9 (50 minutes)

46. The students should be seated in the same way as before and the test administrator should ensure that each student has his own envelope on his desk in front of him.

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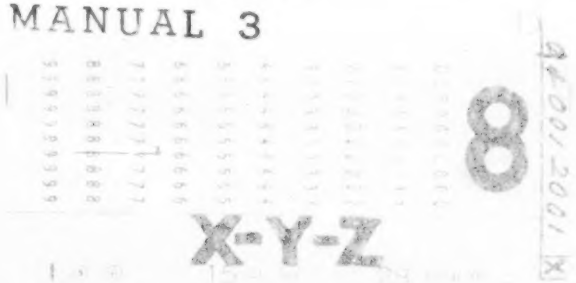
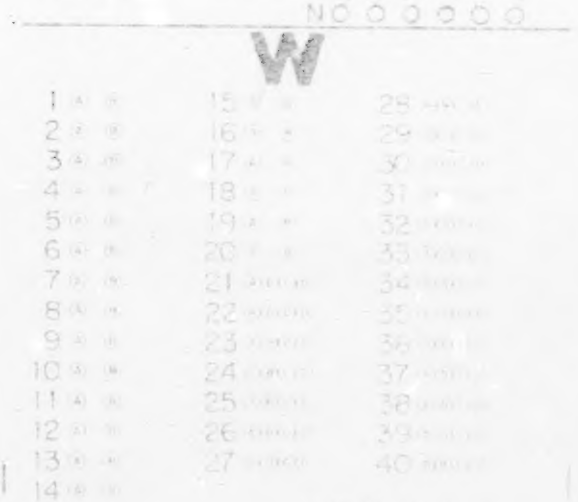


This is the letter that should match the letter on the front of the test booklet.



If any student finds that his answer card does not match his test, then the test administrator should correct the discrepancy by giving him a booklet which matches the letter on his answer card. The student should not be allowed to change answer cards. When all students are ready, say:-

"In this booklet there is a short story. Read the story carefully and thoughtfully before going on to the questions about it. Read the questions carefully and answer them as thoughtfully and accurately as you can. The questions are preceded by instructions which you should follow. All your answers should be marked on your answer card in the Section marked X - Y - Z. Although the answer card has places for 40 answers the test has fewer than 40 questions so do not be worried by the blanks you will have at the end. You will have fifty minutes to do this test. Are there any questions?"

Answer any questions and make sure that the students know what they are to do.

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47. Then say:-

"Take out Test Booklet 9 and answer 8 from the large envelope."

Make sure that the students have done this correctly. Now say:-

"This test is like the last one you did. The answers to the questions are to be marked in Section 7 on the front of you answer card. Although there are spaces for 40 questions in Section 7 on the answer card there are only 37 questions on the test. You should therefore leave numbers 38, 39 and 40 blank on the answer card. You will have fifty minutes to do this test. Are there any questions?"

Answer any questions and make sure that the students know where to mark their answers. Then say:-

"Turn over the page and begin."

After twenty-five minutes say:-

"About half the time has gone. Remember, do not waste time on any questions you do not know how to answer."

After forty-five minutes say:-

"You have about five minutes more. If you have not answered question 37, which comes at the end, please do so now. If after doing this you have any time left, you may go back to any questions you have not answered."

After fifty minutes say:-

"Stop working and put your pencils down."

Tell the students to put answer card 8 and Test Booklet 9 into the large envelope. That is the end of this session. (National Centers may wish to issue an instruction about the collection of materials at this time).

Session 10 (30 minutes)

48. The students are to be seated in the same way as before and the test administrator should ensure that each student has his envelope on the desk in front of him. Then say:-

"Take out Booklet 9 and answer card 8 from the large envelope. Find section Q on the answer card. (Hold up an answer card and indicate Section Q.)

After twenty-five minutes say:-

"About half the time has gone. Remember do not waste time on any question you do not know how to answer."

After forty-five minutes say:-

"You have five minutes more. If you have not answered Question 5, which comes at the end, please do so now. If after doing this you have any time left, you may go back to any questions you have not answered."

After fifty minutes say:-

"Stop working and put your pencils down."

Tell the students to put answer card 8 and the test booklet into the large envelope. Test is the end of this session. (National Centers may wish to issue an instruction about the collection of materials at this time.)

Session 2 (50 minutes)

77. The students should be seated in the same way as before and the test administrator should ensure that each student has his envelope on the desk in front of him.

78. Then say:-

"Take out Test Booklet 9 and answer card 8 from the large envelope."

Make sure that students have done this correctly. Now say:-

"This test is like the last one that you did. The answers to the questions are to be marked in Section V on the front of your answer card. Although there are spaces for 40 questions in Section V on the answer card there are only 37 questions on the test. You should therefore have numbers 38, 39 and 40 blank on the answer card. You will have fifty minutes to do this test. Are there any questions?"

Answer any questions and make sure that the students know where to mark their answers. Then say:-

"Turn over the page and begin."

After twenty-five minutes say:-

"About half the time has gone. Remember do not waste time

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[illegible] questionnaire and check you out on your study of literature. The answers to the questions in Section 2 should be written in Section 3 of the answer book. Answer the questions as accurately as you can. If you have any difficulty understanding what is to be done by a particular question, please tell me. You should be able to answer all the questions if you have studied widely without reference. Are there any questions?"

[illegible] with the answer. Instruction that they are to do rough work in their answer books. Then says:

"You [illegible] the hour."

After the students have finished answering the questions in Section 3, says:

"There is Section 4 on your test packet. You must cut out questions and place them alphabetically. Answer them as quickly and as accurately as you can. Put your answers in the spaces in Section 4 of your answer book. You will have exactly fifteen minutes to complete this section. Are there any questions?"

[illegible] with the question understood that they are to do rough work and check in answer books. Then says:

"You have [illegible] hour."

After the students have finished Section 4, tell them to return the answer book to the small envelope and to put the small envelope that results into the large envelope. Then tell the students to hand the large envelope.

[illegible] tells them that the [illegible] should answer the questions at the end of this section. Instruct students not to talk to each other until they have completed all the tests.

[illegible] tells them that they will be informed by the test administrator as to when the envelopes are to be collected. Then to the [illegible] for the answers for the future of the activity in the [illegible] Center.

___ of my questions you do not know how to answer."

After fifteen minutes say:

"You have about five minutes more. If you have not answered question A, which comes at the end, please do so now. If after doing this you have any more time, you may go back to any questions you have not answered."

After fifty minutes say:

"Stop writing and put your pencils down."

Tell the students to put answer sheet F and test booklet 1 into the large envelope. Start in the end of this section. (Optional feature may wish to insert an intervention about the utilization of intervals at this time.)

Session 12 (50 minutes)

77. The students are to be seated in the same way as before, and the test administrator should ensure that each student has his envelope on the desk in front of him.

Then say:

"Take out booklet 2 and answer sheet G from the large envelope. Find Section 1 on the answer sheet. (Hold up an answer sheet and indicate Section 1).

The questions in Section 1 of the booklet are about you and your study of literature. The answers to the questions in Section 1 should be marked in Section 1 on the answer sheet. Answer the questions as accurately as you can. If you have any difficulty understanding what is wanted in a particular question, please ask me. You should be able to answer all the questions in this section within fifteen minutes. Are there any questions?"

Make sure the students understand what they are to do and answer to record their answers. Then say:

STAGE 3
MANUAL 3

[illegible]

[illegible]

[illegible]

in this section. Read the directions on the first page of Section K. When you have finished, turn over the page and begin. Section K is the last section in this booklet. You are to answer all the rest of the questions in this booklet and mark your answers in Section K on **your** answer card."

62. When all students have completed Section K, tell them to replace the answer card in the small envelope. The test booklet and the small envelope should then be put back into the large envelope, which can be left on the desks or tables, to await the next testing session. (National Centers may wish to issue an instruction to collect the envelopes, if the next testing session is at a much later time.)

Session 4 (40 minutes)

63. The students should be seated in the same way as before. The test administrator should ensure that each student has his envelope on his desk in front of him. National Centers must decide where the Section G page of questions is to be placed, either in front of the word knowledge test in Booklet 6, or after it. Whichever National Centers decide on the appropriate instructions must be inserted to ensure that the students tear out the page and insert it in the card envelope or students envelope for return to the National Centers.

64. Tell the students to take out Booklet 13 and the white answer card 5. Make sure that the students have taken out the right booklet and card. Then say:-

"In this test, words are given to you in pairs. You must decide whether the words have nearly the <u>same</u> meaning, or nearly the <u>opposite</u> meaning. If you think the words have the <u>same</u> meaning, blacken in the oval with a "+" in Section F of your answer card. If you think the words have the <u>opposite</u> meaning, blacken in the oval with an "o" in it.

Here is an example:"

Put the following example on the blackboard, like this:

high low + o

Then say:-

"The two words "high" and "low" both refer to height; however,

they are nearly opposite in meaning. Therefore, you should blacken in the oval with the "o" in it, like this

Fill in the oval with an "o", then say:-

"If you change your mind, remember you must erase your mark completely and then mark your other choice. Are there any questions?"

Answer any questions.

55. Continue as follows:

"You will have ten minutes for this test. Work as quickly as you can and do not waste time on any words you do not know. Now turn over the page and do the questions in Section F."

Note what time it is when the groups starts. After 5 minutes say:-

"About half the time is gone."

After ten minutes say:-

"Stop working and put your pencils down."

"The questions in the next section (Section G) are about you and what you do. Answer them as accurately as you can. If you have any difficulty in understanding what is wanted by a particular question, please ask me. The answers to the questions on the first page of Section G are to be written in the booklet. Please answer the questions on the first page of Section G now."

If this page is put at the front of booklet 6, these instructions will have to be changed.

After the students have had time to do this, say:-

"The answers to the rest of the questions in Section G are to be marked in Section G on the back of the answer card."

If the space allocated for the list of school subjects is greater than the National Center is using, then an instruction will have to be given indicating that there will be x rows to be left blank.

Indicate Section G on the answer card.

"Are there any questions?"

Answer any questions, Then say:-

"You may begin."

After all the students have completed Section G, say:-

"This is the end of Section G. Now open the large envelope and take out the small one which contains the answer cards. Take out the white answer card 6 and put answer card 5 back into the envelope. (Hold up card 6) Now put the smaller envelope inside the large one and place it at the top of your desk (table).

"We are now ready to start Section H. Follow the directions on the first page of Section H as I read them to you. These questions are being put to a large number of students in different countries to find out what they think about themselves and the schools they attend. This is NOT a test. There are no right or wrong answers. We just want to know what you think. Your teacher will not see your answers. When you are told to do so, work through the questions, indicating the answers you want to give by circling the answer you choose. Now turn the page and begin."

When everybody has finished, tell the students to replace the answer card into the small envelope and the test booklet, and the small envelope into the large envelope. (National Centers may wish to issue an instruction about the collection of materials here.)

Session (50 minutes)

66. The students should be seated in the same way as before. The test administrator should ensure that each student has his envelope on his desk in front of him. Then say:-

"From your large envelope take out Booklet 14. From the small envelope of answer cards, take out the pink answer card number 7. You are now going to do some tests to see how well you can read. You should fill in the ovals on your answer card in the same way as you did for the other tests. Look at the front of Booklet 14 and follow while I read the instructions.

This is a test to see how well you understand what you read. The test is made up of four stories with a number of questions on each. Read the first story and so on until you come to the end of Section C.

Each test item starts with a statement or question and then gives you four endings or answers. Pick the best ending or answer and blacken the space corresponding to the answer you have chosen on your answer card. You may read the stories over again as much as you need to. Try each question in turn. If you don't know the answer you may leave it and go on to the next. Come back to it later if you have time. You should answer even if you aren't sure; however, do not guess blindly. When you finish one story, go ahead to the next. Keep working until you reach the end of Section C. If there is any time left go back and try to do any questions that you skipped the first time through."

67. Then say:-

"The answers to the questions in Section C should be marked in Section C on your answer card. You will have fifty minutes to do this test. Are there any questions?"

Make sure that the students know where to mark their answers on the answer card. Then say:-

"Turn over the page and begin working."

After twenty-five minutes say:-

"About half the time has gone. Remember, do not waste time on the questions you do not know how to do."

After forty-five minutes say:-

"You have about five minutes more."

After fifty minutes say:-

"Stop working and put your pencils down."

68. Tell the students to replace their booklets and answer cards in the large envelope. This is the end of Session 5. (National Centers may wish to issue an instruction regarding the collection of envelopes at this point).